

(19)



(11)

EP 2 297 002 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:

09.04.2014 Bulletin 2014/15

(51) Int Cl.:

B65D 83/04 *(2006.01)*

(21) Application number: **09838189.0**

(86) International application number:

PCT/IN2009/000293

(22) Date of filing: **20.05.2009**

(87) International publication number:

WO 2010/082209 (22.07.2010 Gazette 2010/29)

(54) **A PACKAGED-PRODUCT SYSTEM WITH MULTI-OPERATIONAL ACCESS CONTROL**

SYSTEM FÜR EIN VERPACKTES PRODUKT MIT MULTIMODALER ZUGANGSSTEUERUNG

SYSTÈME DE PRODUIT EMBALLÉ À COMMANDE D'ACCÈS MULTI-OPÉRATIONNELLE

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL
PT RO SE SI SK TR**

• **BHANDARI, Mohan, Harakchand**

Aundh Pune 411 008 (IN)

• **MANDALE, Avinash, Shantaram**

Bidewadi Pune (IN)

(30) Priority: **21.05.2008 IN MU10662008**

(74) Representative: **Fredriksson, Teresia**

Aros Patent AB

P.O. Box 1544

751 45 Uppsala (SE)

(43) Date of publication of application:

23.03.2011 Bulletin 2011/12

(73) Proprietor: **Bilcare Limited**

Pune 411 016 (IN)

(56) References cited:

WO-A1-03/068137

WO-A1-2005/049448

US-A1- 2003 015 438

US-A1- 2007 023 317

US-B1- 6 173 838

(72) Inventors:

• **NAIK, Praful, Ramachandra**

Honavar 581 334

Uttara Kanada Karnataka (IN)

EP 2 297 002 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to a child safe packaged-product system with multi-operational access control. The invention further relates to packaged-product system that facilitates interaction with the user so as to render child safe state of the package after use. Further, the invention relates to packaged-product system provided with unique identification information.

Background of the invention

[0002] Products such as medicaments are primarily but not exclusively packaged in blister packs comprising one or plurality of deformable protrusions formed in a flexible sheet with a closure for each of the protrusions. An area of concern with regard to blister packs has been the uncontrolled ease with which products can be dispensed. This becomes particularly important when blister packs are handled by children and / or physically challenged. Further, establishing the authenticity and genuineness of a packaged product before use is essential as counterfeited products when consumed can cause grave harm to the patients.

[0003] Various attempts to achieve the above objectives are reported in literature.

[0004] Prior art reveals typically three design features on which child resistant packages are configured. One such design includes enclosure / carrier and package, wherein the package is removably enclosed in an enclosure having child resistant features. However in such designs, the package has to be removed from the enclosure for accessing the product resulting in separation of the package from the enclosure. Another design involves linkage of the package with the enclosure/ carrier in a manner wherein the linkage is maintained even while the product is accessed. Yet another design comprises of a combination package wherein a portion of the package has restricted access zone while the other portion has a general access zone. Such a design is incapable of providing child resistant features in its entirety.

[0005] Further, some of these designs suffer from a drawback that in certain orientations such as vertically placed with the enclosure opening facing downwards, mere operation of the initial child resistant feature such as depression of a lever can result in release of the non child resistant blister package with negligible effort.

[0006] United States Patent 7201274 discloses a package having a simultaneous stop, alignment, and enhanced tamper-resistant feature, wherein the package has an outer sleeve and a slide card slidably disposed within the outer sleeve. A stop panel is disposed on an inside surface of the outer sleeve and has an extension panel extending away therefrom, wherein the extension panel enhances the tamper-resistant nature of the package. A guide panel extends along a longitudinal edge of the outer sleeve and has a length equal to or greater than a combined length of the stop panel and extension panel.

The guide panel being folded over the extension panel to defined a channel between an edge of the guide panel and a score line separating first and second panels of the outer sleeve.

[0007] United States Patent 7325689 discloses a pharmaceutical package assembly that includes a tether having a fold-over card mating feature, and a fold-over card configured to house one or more pharmaceutical blisters, wherein the fold-over card includes a tether mating feature. One exemplary method of coupling the fold-over card to a tether includes forming a tether receiving recess in the front side of the fold-over card, folding the front side of the fold-over card adjacent to the back side of the fold-over card so that the tether receiving recess reveals an exposed portion of the fold-over card front side, and coupling the tether to the revealed portion of the card front side. Another exemplary method of coupling a fold-over card to a tether having a front side and a back side includes forming a fold-over card receiving recess in the tether such that when the front side of the tether is folded adjacent to the back side of the tether, the fold-over card receiving recess reveals an exposed portion of the tether, and coupling the fold-over card to the revealed portion of the tether.

[0008] United States Patent 7188728 discloses a child-resistant senior-friendly blister card packaging that is cheap and easy to manufacture. The packaging requires a push-peel-push method for opening, which is cognitively and physically challenging for children and mentally impaired adults. Yet, competent adults can easily open the package, especially after reading instructions. More specifically, opening the package requires the user to: 1) Push through an aperture to create a pull tab; 2) Pull on the pull tab to remove a panel; and 3) Push the blister to force the contents through the blister's seal. Advantageously, the present invention is designed such that information such as instructions and product information can be easily printed directly on the packaging. Moreover, users may also record information directly on the packaging.

[0009] EP Patent 1685 034 discloses child resistant packaging system and method for making same. It is essentially a combination pack wherein the same blister pack is provided with free access portion and child resistant portion wherein access to some medications is restricted. Thus it is not a completely child resistant packaging system.

[0010] US Patent 6679381 discloses one hand opening child resistant blister pack container comprising top and bottom tray preferably connected by a hinge. The top and bottom trays have a tab extending therefrom. Blister pack is contained in this container.

[0011] The review of the prior art reveals following drawbacks:

- ✓ Physical dislodgement of the package from the child resistant enclosure while accessing product from the package thereby enhancing the

- ✓ possibility of temporarily or permanently separating the package from the child resistant enclosure
- ✓ The absence of any provision to alert and or alarm the user to replace with proper re-positioning of the package in the child resistant enclosure after use
- ✓ Incapability of providing child resistant features in entirety.
- ✓ Mere operation of the initial child resistant feature such as depression of a lever can result in release of the non child resistant blister package with negligible effort.
- ✓ Lack of dedicated and permanent pairing of the package and the tray leading to the danger of misuse of the support / tray / enclosure after the consumption of the product in the package
- ✓ Lack of provision to remind user to reposition the package in the child resistant enclosure after use
- ✓ Additional openings in the package holding provisions such as tray and lack of single mould construction because of the child resistant hinging cap
- ✓ Isolation of the package from the child resistant enclosure while accessing product from the package resulting in the danger of separation of the package from the child resistant enclosure

[0012] There is therefore a long-felt need to provide child-safe package systems to ensure that a child has to perform multiple operations to access the product from the package without dislodging the product pack from the packaging system, and easily repositioning the product pack in the packaging system, optionally equipped with user alert / alarm as a safety provision. Further it is desirable to build into the packaging system means to uniquely identify the said product package associated with the the packaging system for diverse applications including anticounterfeiting, pharmaco-vigilance in clinical trials, enhancing patient compliance, etc.

[0013] The document US2007/0023317 discloses a child-resistant compact for dispensing product on blister cards.

[0014] The main object of the invention is to provide a child-safe packaged-product system with multi-operational access control having restrictive means for access of the package after completion of the activities related to child resistant features thereby effectively eliminating the direct involvement of the blister package in activities related to child resistant features. It is a further object of the invention to provide a means to remind / alert user of reengaging / repositioning the package in the child-safe state after use.

[0015] Another object of the invention is to provide a packaged-product system with a dedicated / permanent pairing of the package with the child safe carrier / support / tray / enclosure so as to avoid reuse of the system after consumption of the products from the package.

[0016] Another object of the invention is to provide a uniquely identifiable package.

[0017] Yet another object of the invention is to provide

a means for uniquely identifying the package to authenticate the same.

[0018] Yet another object of the invention is to provide at least two sets of identification information on the product package.

[0019] Another object of the invention is to detect and record access of the product package from the closure and communicate to the external device.

[0020] Thus one aspect of the invention provides a system comprising:

a package, package holding provision in which the package is hingably mounted, wherein the said package holding provision comprises

a tray like structure, a protruding reciprocable member from base of the tray , a pressable member preferably both integrated in the said base of the tray, an optional sensing means is provided to sense the presence of the package on the base of the said tray wherein the said means is configured with power source and user interactive audio /visual / vibratory means;

a package fixing provision comprising first stripe adapted for fixing the package and a second stripe adapted to fix the package and rotatably fixed lengthwise to the said first stripe wherein the said first stripe is provided with hingable mounting provision on the edges along the length;

wherein

the first stripe of the said package fixing provision is hingably connected at the distant end of the tray from the said protruding reciprocable member;

package adapted to fix between the said first and second stripe wherein the package comprises of an opening to receive the said protruding reciprocating member, optional unique identification information wherein the package is adapted to fit on the said first stripe of the said package fixing provision;

the said package fixing provision is provided with restrictive means enabling it to operably couple to the said package holding provision;

wherein

the package is fixed in the said package fixing provision that is rotatable around the said end of the tray such that the only openable side of the package rests on the base of the tray of the package holding provision and the said restrictive means is engaged or coupled to the said tray base of the package holding provision.

[0021] In operation the user has to reciprocate the said reciprocable means and simultaneously press the said pressable member to partially disengage the said pack-

age from the said package holding provision to complete child resistant activity, further the user has to perform yet another activity to decouple or disengage the assembly of package and package fixing provision that is operably coupled or engaged by the restrictive means with the said lamina of the package holding provision to access the package resulting in the technical effect of obviating the problem of package access as a part of the child resistant activity.

[0022] In another aspect of the invention the said restrictive means is a peg with a profiled protrusions fixed or integrated with / on the said package fixing provision and operably engaged or coupled with the said lamina of the package holding provision.

[0023] In another aspect of the invention the said sensing means is provided on the surface of the said lamina in the form of a pressable switch configured with power source and audio/visual/sensory means, when the package is rotated it overlays / rests on the surface of the lamina and presses the said switch wherein upon removing the package from the said rest position at the time of consuming the product in the package, the switch is depressed resulting in providing audio / visual indication to the user so as to remind him / her of repositioning the said package on the said lamina to render child resistant state.

[0024] In another aspect of the invention a reader device is provided to identify and read the unique identification information on the said package.

[0025] In another aspect of the invention a reader means is provided to identify and read the unique identification information on the said package wherein the reader means is suitably able to detect the identification information relating to the product package and conveys the information or generates a signal in response to the information which is communicable to the external device. Suitably, the information is encoded and preferably is optical, electronic or magnetic wherein the reader means comprises of one or more reading elements arranged to correspond to the position of each set of identification information on the package for reading the at least two sets of identification information;

wherein the said reader means is adapted to read a signal from the at least one identification feature of each of the at least two sets of identification

information arranged on or incorporated within different surfaces, sides or planes of the package, and wherein the reading device is configured such that it defines the spatial relationship between a first discrete area of the first set of identification information to be read and a second discrete area of the second set of identification information to be read, and determining, using the reading device, at least one characteristic of a property of the at least one identification feature of the first set of identification features, thereby obtaining a first signal, determining, using the reading device, at least one characteristic of a property of the at least one identification feature of the second set of identification features, thereby obtain-

ing a second signal, using a processing unit to derive/form/generate at least one signature for the object, using said first and said second signals (and thereby inherently or explicitly the features' spatial relationship).

Description of the Invention

[0026] Features and advantages of the invention will become apparent in the following detailed description and the preferred embodiments with reference to the accompanying drawings.

Figure 1 Schematic of the packaged-product system (Sheet 1)

Figure 2 Assembly of the packaged-product system (Sheet 2)

Figure 3 Assembly view of the packaged-product system (Sheet 2)

Figure 4 Assembly view of the packaged-product system (Sheet 3)

Figure 5 Assembly view of the packaged-product system (Sheet 4)

[0027] Figure 1 depicts one of the embodiments of the system. It comprises of a package 1 and a package holding provision 2 in the form of tray like structure in which the package is hingably mounted. The package holding provision 2 comprises a base in the form of a substantial flat lamina 3 with partial edge portions (4, 5, 6) protruding upwards to form a tray like structure. The lamina is adapted to fit a reciprocable member 7 that protrudes out of the lamina as shown in the figure and a pressable member 8 preferably both integrated in the said lamina. Further the lamina is provided with one or plurality of engaging provision/s 21. In one of the embodiments, a means is provided to sense the presence of the package on the surface of the said lamina 3 wherein the said means is configured with power source and user interactive audio /visual and sensory means. In one of the variants of this embodiment is shown in the Figure 1 wherein a pressable switch 9 is disposed on the surface of the said lamina and configured with power source and audio /visual user interactive means (not shown). The switch 9 is pressed when the package rests on it. In another variant there can be plurality of such switched disposed on the said lamina. In another variant a proximity switch (not shown) is disposed in the vicinity of the said reciprocable member 7 wherein the said switch is configured with the power source and user interactive means.

[0028] The package holding provision 2 is operably connected to a package fixing provision 10 comprising first stripe 11 provided with slots / depressions 12 for receiving and fixing the package 1 and a second stripe 13 rotatably connected lengthwise to the said first stripe wherein the said first stripe is provided with hingable mounting provision 14, 15 on the edges along the length. In one of the embodiments the said second strip 13 is provided with a restrictive means such as pegs on the

other surface facing (elaborated in the description of the Figure 2)

[0029] As shown in the Figure 1, the first stripe 11 of the said package fixing provision is hingably connected at the end of the said package holding provision 2 where edge portion is not protruded. The package 1 comprises of an opening 16 to receive the said protruding reciprocable member 7 of the said lamina. The package is adapted to fit on the said first stripe of the said package fixing provision and is provided with region 25 for providing unique identification information. Further the said package is provided with optional unique identification information.

[0030] Figure 2 depicts assembly of the package with the package holding and package fixing provision wherein the package is fixed in the said package fixing provision. As a representation, one of the variants of restrictive means in the form of pegs is elaborated hereunder. The package 1 is fixed between the first and second stripes 11 and 13 wherein the stripe 13 is seen in the Figure 2. The stripe 13 overlays the stripe 11 (the first stripe 11 is behind the stripe 13). The second stripe 13 is provided with one or plurality of pegs 20 on its surface facing the lamina as seen in the Figure 2 (a). The exploded view of one of the variants of the said pegs is depicted in Figure 2 (b). The peg is provided with a profiled surface 40 as shown in the figure comprising one or plurality of projections that facilitates interference fit and disengagement of the peg in at least two steps wherein the peg gets partially disengaged from the provision 21 upon pressing of the said pressable member 8 of the said lamina and further force is needed to disengage the peg completely and thereby lift the package assembly to access the package from the said package holding provision. The package is rotated around the said hingable provisions 14, 15 connected to the package holding provision in the direction 22 indicated by the arrow so that the package overlays, rests on the lamina causing the said switch 9 to be pressed, engaging peg the 20 in 21 and positioning and engaging of the package opening 16 in the said reciprocable member 7.

[0031] Figure 3 depicts the packaged-product system wherein package is positioned in the said package holding provision. As shown in the figure the said reciprocable member 7 is engaged in the package. To access the product, user has to reciprocate the said member 7 and press the pressable member 8 of the lamina to dislodge the said package. Further, user has to apply slight force to disengage the said pegs from the provision 21 so that the package rotates around the said hingable provisions. Further the package is provided with a uniquely identifiable information and /or combination of information on the region 25 that hangs out of the said package holding provision.

[0032] In the operation the package is fixed in the said package fixing provision that is rotatable around the said end of the tray such that the package overlays / rests on the surface of the lamina when rotated and presses the

said switch wherein upon removing the package from the said rest position at the time of consuming the product in the package, the switch is depressed resulting in providing audio / visual indication to the user so as to remind him / her of repositioning the said package on the said lamina to render child resistant state.

[0033] Figure 4 depicts one of the embodiments of the packaged-product system. It comprises of a package 1 and a package holding provision 2 in the form of tray like structure in which the package is hingably mounted. As depicted and described in the Figure 1, the package holding provision 2 comprises a base in the form of a substantial flat lamina 3 with partial edge portions protruding upwards to form a tray like structure. Further, the lamina is adapted to fit a reciprocable member that protrudes out of the lamina and a pressable member preferably both integrated in the said lamina. The lamina is provided with one or plurality of engaging provision/s 21. The package holding provision 2 is operably connected to a package fixing provision 50 that is in the form of a frame like structure adapted to fit package in it. The frame like structure comprises of stripes indicated as 51, 52, 53, 54 around the edges of the package. These stripes are integrated with each other and have provision to hold the package between them. One of the stripe portion 54 has provision for receiving and fixing the package and is hingable mounted to the said lamina 3. Further the stripes on the surface facing the said lamina are provided with pegs (as depicted and described in Figure 2) with a profiled surface comprising one or plurality of projections that facilitates interference fit and disengagement of the peg in at least two steps wherein the said lamina is provided with corresponding engagement provision for the said pegs. In operation, to access the product, user has to reciprocate the said member and press the pressable member of the lamina to dislodge the said package. Further, user has to apply slight force to disengage the said pegs from the provision provided on the said stripes around the package so that the frame like structure (comprised of stripes 51, 52, 53 and 54) of stripes along with the package rotates around the said hingable provisions as shown in the Figure 4b.

[0034] One of the variants of this configuration is depicted in Figure 5. The blister 51 is provided with perforation lines 52 and is adapted to fit on the package holding provision 50 comprising lamina 55 provided with adhesive means 56 disposed on the said lamina so as to hold / attach the package. Further, the said lamina is adapted to receive a snap at 54. The said lamina is operably connected to the frame like structure 56 comprising of stripes integrated with each other and disposed along the side of the package. The said structure 56 is provided with snap 57 that is removably received in provision 56 of the lamina. In operation, the said snap has to be pressed to unlock the hinge and access the package as shown in the figure. The stripes (of the said framelike structure 56) on the surface facing the said lamina are provided with peg/s (as depicted and described in Figure 2) with a pro-

filed surface comprising one or plurality of projections that facilitates interference fit and disengagement of the peg in at least two steps wherein the said lamina is provided with corresponding engagement provision for the send pegs. In operation user has to disengage the said snap 57 and further disengage the peg/s, further, the product is accessed by shearing part of the package along the said perforated lines to access the product.

[0035] One of the variants comprises of a package and a package holding provision in the form of tray like structure in which the package is hingably mounted. The package holding provision comprises a base in the form of a substantial flat lamina. The said base is adapted to fit a reciprocable member that protrudes out of the lamina and a pressable member as shown in Figure 1. The package holding provision is operably connected to a package fixing provision that comprises of first stripe provided with slots / depressions for receiving and fixing the package and a second stripe rotatably connected lengthwise to the said first stripe wherein the said first stripe is provided with hingable mounting provision at one of the ends and other end is free to move / slide on the horizontal plane of the said base such that the said fixing provision along with the package fixed in it is slidable over the said base to access the product wherein the package is not rotated but is slid along the surface of the said base to access product from the package.

[0036] In one of the embodiments the said package is provided with hingable provisions integrated with it wherein the said hingable provision of the package is rotatably connected to the said package holding provision 2 where edge portion is not protruded. Thus instead of the package fixing provision the package with the hingable provision is mounted / connected to /on the package holding provision 2. In another variant of this embodiment, the package 1 comprises of first and second stripes 11 and 13 respectively wherein the package is fixed between them to form a separate assembly wherein the said assembled package is rotatably connected / coupled to the said package holding provision 2.

[0037] In another embodiment the said package holding and package fixing provision are made out of cardboard. In another variant of this embodiment the said package holding and package fixing provision are made out of biodegradable material. In yet another variant of this embodiment the said package holding and package fixing provisions are made out of plastic.

[0038] In another embodiment a reader means is provided to identify and read the unique identification information on the said package wherein the reader means is suitably able to detect the identification information relating to the product package and conveys the information or generates a signal in response to the information which is communicable to the external device. Suitably, the information is encoded and preferably is optical, electronic, magnetic or a combination thereof.

[0039] In yet another embodiment the said package holding provision may comprise any conventional reader

means to detect the encoding information identifying the product package. The information or signal may be stored in the package holding provision.

[0040] In one of the embodiment of the package system, a uniquely identifiable information and /or combination of information is provided on the package.

[0041] In yet another embodiment product package is provided with an identification tag for identifying the package for authentication. The tag comprises at least two sets of identification information, said at least two sets of identification information comprising a first set of identification information and a second set of identification information each arranged within a different surface, side or plane of the identification tag, and identification features of said first set of identification information and identification features of said second set of identification information are arranged at a fixed relative spatial position with respect to each other, said fixed spatial relationship being used for identifying the package system.

[0042] In yet another embodiment the identifiers are present in a tag on the product package wherein one identifier comprises a readable layer of randomly distributed material which is capable of encoding identification information, for example a conductive material, magnetized or magnetisable material, semiconductive particle and optically active particles; the second identifier suitably comprises optical information, for example a 1-D or 2-D bar code.

[0043] In yet another embodiment at least two sets of identification information is provided on the product package and / or package holding provision. In another variant of this embodiment unique identifying information is suitably included on the package in the form of oriented or orientable particles and may relate to for example, the manufacturer of the package or to an individual. Preferably the identification information comprises information derived from a magnetic field and/or an electric field and optionally optical or magneto-optical information. In yet another variant of this embodiment nano / micro particulate materials and/or material composites with measurable material metrics are used on the package for identification information.

[0044] In a preferred embodiment, the product package suitably comprises a substantially non-magnetic host material having pores, wherein at least some of the pores contain a substantially magnetic material which is codeable to encode identification information for identifying the product package or a unit dose package. The product package may comprise a substantially electrically-insulating host material having pores, wherein at least some of the pores contain a substantially electrically-conducting material which is codeable to encode identification information for identifying the unit dose package. Desirably, the electrically-conducting material is connectable to a voltage source.

[0045] In yet another embodiment the package system is provided with a means to detect disengagement of the package from the closure to monitor and /or record of

package and /or product access from the package system. In another variant of this embodiment the package system is provided with a wired / wireless communication means capable of interacting with external / remote device/s.

[0046] In another embodiment a sensing means in the form of embedded system is adapted to fit on the said package system to detect disengagement of the package from the said holding provision to monitor and /or record of package and /or product access from the package system. The said sensing means comprises of signal generating provision/s, data processing means, data logging and storing means configured with a communication means an optional communication switch, a power source, optional audio signal generating means, an oscillator (Real time clock) wherein the said signal generating means gets activated upon disengaging the said package from the package holding provision. The activation of the signal generating provision may be done by various means such as electronic, mechanical, optical, visual. In a specific embodiment, visual display and the audio signal generating means is provided to alert the user of the time and date of the products to be consumed and also provides quantitative information about the number of products in the package. As the user disengages the package from the closure a signal from the said signal generating provision is sent to the said data processing means wherein the time & date of product dispensed is logged into the data logging provision of the said data processing means. Using the optional communication feature, the user may transfer the logged data to an external device by optionally embedded the communication switch.

[0047] In one of the variants of this embodiment said logged data in the said data processing is transferred / transmitted via communication means to an external device/s with the aid of RF-wherein the said logged data to be transferred is superimposed on the RF field, generated by the RF circuit. In yet another variant of this embodiment the said logged data in the said data processing means is transferred / transmitted via communication means to the said external device/s using an IR link wherein the said logged data to be transferred is in the form of coded pulses or frequency. In yet another variant of this embodiment the said logged data in the said data processing means is transferred / transmitted via communication means to the said companion device through wired and / or any direct contact methods such as I2C, SPI, serial or parallel communication but not limited to these. In yet another variant of this embodiment the data is transferred using wireless communication means such as Bluetooth, Wi-Fi, Zeegee, Wi-Max, GPRS, GSM, Wi-bree but not limited to it.

[0048] Thus it is evident from the present invention that the synergistic operational combination of the said package holding provision, package fixing provision, an assembly of the package and package fixing provision operably connected or engaged by the said restrictive

means results in a multi-operational access control to access the package after the completion of the child resistant activity obviating the problem of package access as a part of the child resistant activity. Further provision of the said means to remind / alert user of reengaging / repositioning the package in the child-safe state after use renders child resistant state to the package after use enhancing the effectiveness of the child resistant function of the package.

Claims

1. A child safe packaged-product system with multi-operational access control system comprising:

a package (1), a package holding provision (2) in which the package (1) is hingably mounted, wherein the said package holding provision (2) comprises a tray like structure (3), a protruding reciprocable member (7) from a base of the tray, a pressable member (8) preferably both integrated in the said base of the tray (3), an optional sensing means is provided to sense the presence of the package on the base of the said tray wherein the said means is configured with power source and user interactive audio or visual or vibratory means;

a package fixing provision (10) comprising a first stripe (11) fixing the package (1) together with a second stripe (13) which second stripe (13) is rotatably fixed lengthwise to the said first stripe (11) wherein the said first stripe (11) is provided with hingable mounting provision (14, 15) on the edges along its length;

wherein

the first stripe (11) of the said package fixing provision (10) is hingably connected at a distant end of the tray (3) from the said protruding reciprocable member (7);

the package (1) is fixed between the said first and second stripe (11, 13) wherein the package (1) comprises an opening (16) to receive the said protruding reciprocating member (7), optional unique identification information (25)

wherein the package (1) fits on the said first stripe (11) of the said package fixing provision (10);

the said package fixing provision (10) is provided with restrictive means enabling it to operably couple to the said package holding provision (2); wherein

the package (1) is fixed in the said package fixing provision (10) that is rotatable around the said end of the tray (3) such that the only openable side of the package (1) rests on the base of the tray (3) of the package holding provision (2) and the said restrictive means is engaged or coupled

to the said tray (3) base of the package holding provision (2).

2. A child safe packaged-product system with multi-operational access control system as claimed in claim 1 wherein the said sensing means is provided on the surface of the said base in the form of a pressable switch (9) configured with power source and audio or visual or sensory means, when the package (1) is rotated it rests on the surface of the base (3) and presses the said switch (9) wherein upon removing the package (1) from the said rest position at the time of consuming the product in the package, the switch (9) is depressed resulting in providing audio or visual indication to the user so as to remind him or her of repositioning the said package (1) on the said lamina (3) to render child resistant state.
3. A child safe packaged-product system with multi-operational access control system as claimed in claims 1,2 wherein the said restrictive means is a peg (20) with a profiled protrusions (40) fixed or integrated with or on the said package fixing provision and operably engaged or coupled with the said lamina of the package holding provision.
4. A child safe packaged-product system with multi-operational access control system as claimed in claims 1-3 wherein the said package (1) comprises of hingable provisions wherein the said hingable provisions are rotatably connected to the said package holding provision.
5. A child safe packaged-product system with multi-operational access control system as claimed in claims 1-4 wherein the package (1) comprises of first and second stripes (11, 13) wherein the package (1) is fixed between the said stripes to form a separate assembly wherein the said assembled package is rotatably coupled to the said package holding provision (2).
6. A child safe packaged-product system with multi-operational access control system as claimed in claims 1-5 wherein the material of constructing for the said package holding and package fixing provision is selected from biodegradable material such as cardboard, plastic, polymer based material or combination thereof.
7. A child safe packaged-product system with multi-operational access control system as claimed in claims 1-6 wherein the package is provided with an identification tag for identifying the package for authentication wherein the tag comprises at least two sets of identification information, said at least two sets of identification information comprising a first set of identification information and a second set of identification information each arranged within a different surface, side or plane of the identification tag, and identification features of said first set of identification information and identification features of said second set of identification information are arranged at a fixed relative spatial position with respect to each other, said fixed spatial relationship being used for identifying the packaged-product system.

fication information each arranged within a different surface, side or plane of the identification tag, and identification features of said first set of identification information and identification features of said second set of identification information are arranged at a fixed relative spatial position with respect to each other, said fixed spatial relationship being used for identifying the packaged-product system.

8. A child safe packaged-product system with multi-operational access control system as claimed in claim 7 wherein the identifiers are present in a tag on the product package wherein one identifier comprises a readable layer of randomly distributed material which is capable of encoding identification information, for example a conductive material, magnetized or magnetisable material, semiconductive particle and optically active particles; the second identifier suitably comprises optical information, for example a one dimensional or two dimensional bar code.
9. A child safe packaged-product system with multi-operational access control system as claimed in claims 1- 8 wherein the said sensing means comprises of signal generating provision, data processing means, data logging and storing means configured with a communication means an optional communication switch, a power source, optional audio signal generating means, an oscillator wherein the said signal generating means gets activated upon disengaging the said package from the package holding provision to detect disengagement of the package from the said package holding provision to monitor or record of package or product access from the package system wherein the activation of the signal generating provision is done by means such as electronic, mechanical, optical, visual.
10. A child safe packaged-product system with multi-operational access control system as claimed in claims 1,9 wherein upon disengagement of the package from the said holding provision, a signal from the said signal generating provision is sent to the said data processing means wherein the time & date of product dispensed is logged into the data logging provision of the said data processing means wherein said logged data in the said data processing is transferred or transmitted via communication means to an external device/s with the aid of radio frequency, infrared link , wired or any direct contact methods such as I2C (Inter-Integrated Circuit), SPI (Seria Peripheral Interface), serial or parallel communication.
11. A child safe packaged-product system with multi-operational access control system as claimed in claim

1 wherein the said package holding provision is operably connected to a package fixing provision that is in the form of a frame like structure adapted to fit package in it wherein the frame like structure comprises of stripes integrated with each other and disposed around the edges of the package so as to hold the package wherein the stripes on the surface facing the base of the package holding provision are provided with at least one peg with a profiled surface comprising one or plurality of projections that facilitates interference fit and disengagement of the peg in at least two steps wherein the said lamina is provided with corresponding engagement provision for the said pegs.

12. A child safe packaged-product system with multi-operational access control system as claimed in claim 1 wherein the system comprises a package in the form of a blister (51) provided with perforation lines (52) between the product containments, the said blister (51) is adapted to attach to the package holding provision (50) comprising a lamina provided with a bonding means disposed on the said lamina so as to hold or attach the package; the said lamina is adapted to removably receive a snap wherein the said lamina is operably connected to the frame like structure (56) comprising of stripes integrated with each other and disposed along the side of the package (51); the said structure is provided with snap (57); the said stripes of the said frame like structure (56) on the surface facing the said lamina are provided with at least one peg with a profiled surface comprising one or plurality of projections that facilitates interference fit and disengagement of the peg in at least two steps wherein the said lamina is provided with corresponding engagement provision for the said pegs.

13. A child safe packaged-product system with multi-operational access control system as claimed in claim 1 wherein the said package holding provision is adapted to fit a reader means to identify and read the unique identification information on the said package wherein the reader means is suitably able to detect the identification information relating to the product package and conveys the information or generates a signal in response to the information which is communicable to the external device.

14. A child safe packaged-product system with multi-operational access control system as claimed in claims 1-13 wherein to access the product, user has to reciprocate the said reciprocable means and simultaneously press the said pressable member to partially disengage the said package from the said package holding provision to complete child resistant activity, further the user has to perform yet another activity to decouple or disengage the assembly of package

and package fixing provision that is operably coupled or engaged by the restrictive means with the said lamina of the package holding provision to access the package.

Patentansprüche

1. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem, umfassend:

eine Verpackung (1), eine Verpackungshaltevorrichtung (2), in welcher die Verpackung (1) klappbar gelagert ist, wobei besagte Verpackungshaltevorrichtung (2) umfasst eine muldenähnliche Struktur (3), ein von der Basis der Mulde hervorragendes zurückschiebbares Teil (7), ein drückbares Teil (8), vorzugsweise beide in die besagte Basis der Mulde (3) integriert, ein optionales Wahrnehmungsmittel ist vorgesehen, um das Vorhandensein der Verpackung auf der Basis der besagten Mulde wahrzunehmen, wobei das besagte Mittel mit Energiequelle und benutzergesteuerten akustischen oder visuellen oder vibratorischen Mitteln konfiguriert ist; eine Verpackungsfixierungsvorrichtung (10), umfassend einen ersten Streifen (11), der die Verpackung (1) zusammen mit einem zweiten Streifen (13) fixiert, wobei der zweite Streifen (13) drehfest längsseits des besagten ersten Streifens (11) fixiert ist, wobei der besagte erste Streifen (11) mit klappbarer Lagerungsvorrichtung (14, 15) längs seiner Kanten ausgestattet ist; wobei der erste Streifen (11) der besagten Verpackungsfixierungsvorrichtung (10) klappbar verbunden ist an einem von dem besagten hervorragenden zurückschiebbaren Bauteil (7) entfernten Ende der Mulde (3); die Verpackung (1) fixiert ist zwischen den besagten ersten und zweiten Streifen (11, 13), wobei die Verpackung (1) eine Öffnung (16) umfasst, um besagtes hervorragendes zurückschiebbares Bauteil (7) aufzunehmen, optional eindeutige Identifizierungsinformation (25) wobei die Verpackung (1) an dem besagten ersten Streifen (11) der besagten Verpackungsfixierungsvorrichtung (10) anliegt; die besagte Verpackungsfixierungsvorrichtung (10) ausgestattet ist mit restriktivem Mittel, das sie befähigt, operabel an die besagte Verpackungshaltevorrichtung (2) zu koppeln; wobei

- die Verpackung (1) in der besagten Verpackungsfixierungsvorrichtung (10) fixiert ist, die um das besagte Ende der Mulde (3) rotierbar ist, so dass die einzig zu öffnende Seite der Verpackung (1) auf der Basis der Mulde (3) der Verpackungshaltevorrichtung (2) ruht und das besagte restriktive Mittel in die Basis der besagten Mulde (3) der Verpackungshaltevorrichtung (2) eingeklinkt oder an sie gekoppelt ist.
2. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem nach Anspruch 1, wobei sich das besagte Wahrnehmungsmittel auf der Oberfläche der besagten Basis befindet in Form eines drückbaren Schalters (9), konfiguriert mit Energiequelle und akustischen oder visuellen oder sensorischen Mitteln, wenn die Verpackung (1) rotiert wird, ruht sie auf der Oberfläche der Basis (3) und drückt den besagten Schalter (9), wobei beim Entfernen der Verpackung (1) aus der besagten Ruheposition zur Zeit des Verbrauchens des Produkts in die Verpackung, der Schalter (9) niedergedrückt wird, was zu einer akustischen oder visuellen Anzeige für den Benutzer führt, so dass er oder sie an das Repositionieren der besagten Verpackung (1) auf der besagten Schicht (3) erinnert wird, um einen kindersicheren Zustand zu ermöglichen.
3. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem wie in den Ansprüchen 1, 2 beansprucht, wobei das besagte restriktive Mittel ein Stift (20) ist mit profilierten Überständen (40), fixiert an oder integriert in besagter Verpackungsfixierungsvorrichtung und operabel verbunden oder gekoppelt an die besagte Schicht der Verpackungshaltevorrichtung.
4. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem wie in den Ansprüchen 1-3 beansprucht, wobei die besagte Verpackung (1) aus klappbaren Vorrichtungen gebildet wird, wobei die besagten klappbaren Vorrichtungen mit der Verpackungshaltevorrichtung rotierbar verbunden sind.
5. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem wie in den Ansprüchen 1-4 beansprucht, wobei die Verpackung (1) aus ersten und zweiten Streifen (11, 13) gebildet wird, wobei die Verpackung (1) zwischen den besagten Streifen fixiert ist, um eine separate Anordnung zu formen, wobei die Verpackung drehbar an die besagte Verpackungshaltevorrichtung (2) gekoppelt ist.
6. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem wie in den Ansprüchen 1-5 beansprucht, wobei das Konstruktionsmaterial der besagten Verpackungshalte- und Verpackungsfixierungsvorrichtung ausgewählt ist aus biologisch abbaubarem Material wie Pappe, Kunststoff, auf Polymeren basierendes Material oder eine Kombination daraus.
7. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem wie in den Ansprüchen 1-6 beansprucht, wobei die Verpackung mit einem Identifikationskennzeichen versehen ist, um die Verpackung zur Authentifizierung zu identifizieren, wobei das Kennzeichen wenigstens zwei Sätze von Identifizierungsinformation umfasst, wobei besagte wenigstens zwei Sätze von Identifizierungsinformation einen ersten Satz von Identifizierungsinformation und einen zweiten Satz von Identifizierungsinformation umfassen, wobei jeder in einer anderen Oberfläche, Seite oder Ebene des Identifizierungskennzeichens arrangiert ist, und Identifizierungseigenschaften besagten ersten Satzes von Identifizierungsinformation und Identifizierungseigenschaften besagten zweiten Satzes von Identifizierungsinformation in einer festen relativen räumlichen Position in Bezug zueinander arrangiert sind, wobei besagte feste räumliche Beziehung verwendet wird zum Identifizieren des Systems des verpackten Produkts.
8. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem nach Anspruch 7, wobei die Identifikatoren in einem Kennzeichen auf der Produktverpackung vorliegen, wobei ein Identifikator eine lesbare Schicht zufällig verteilten Materials umfasst, das geeignet ist, Identifizierungsinformation zu kodieren, zum Beispiel ein leitfähiges Material, magnetisierte oder magnetisierbare Material, halbleitende Teile und optisch aktive Teile; entsprechend umfasst der zweite Identifikator optische Information, zum Beispiel einen eindimensionalen oder zweidimensionalen Strichcode.
9. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem wie in den Ansprüchen 1-8 beansprucht, wobei die besagten Wahrnehmungsmittel aus signalgenerierender Vorrichtung, Datenverarbeitungsmitteln, Datensammlungs- und Speicherungsmitteln gebildet werden, konfiguriert mit einem Kommunikationsmittel, einem optionalen Kommunikationsschalter, einer Energiequelle, optional audiosignalgenerierenden Mittel, einem Oszillator, wobei das signalgebende Mittel beim Auslösen der besagten Verpackung von der Verpackungshaltevorrichtung aktiviert wird zum Feststellen der Freigabe der Verpackung von der besagten Verpackungshaltevorrichtung, um Verpackungs- oder Produktzugang vom Verpackungssystem anzuzeigen oder aufzuzeichnen wobei

die Aktivierung der signalgenerierenden Vorrichtung durch Mittel getätigt wird, wie elektronische, mechanische, optische, visuelle.

10. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem wie in den Ansprüchen 1, 9 beansprucht, wobei bei Freigabe der Verpackung von der besagten Haltevorrichtung ein Signal von der besagten signalgenerierenden Vorrichtung gesendet wird an das besagte Datenverarbeitungsmittel, wobei die Zeit und das Datum des ausgegebenen Produkts gesammelt wird in der Datensammlungsvorrichtung des besagten Datenverarbeitungsmittels, wobei besagte gesammelte Daten in besagter Datenverarbeitung wird transferiert oder übermittelt werden via Kommunikationsmittel an ein externes Gerät/externe Geräte mithilfe von Radiofrequenz, Infrarotverbindung, kabelgebundene oder andere direkte Kontaktmethoden, wie Inter-Integrated Circuit (I2C), SPI (Seria Peripheral Interface), serielle oder parallele Kommunikation. 5 10 15 20
11. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem nach Anspruch 1, wobei die besagte Verpackungshaltevorrichtung operabel mit einer Verpackungsfixierungsvorrichtung in Form einer rahmenähnlichen Struktur, geeignet, um die Verpackung darin einzupassen, verbunden ist, wobei die rahmenähnliche Struktur gebildet wird aus ineinander integrierten und um die Kanten der Verpackung angeordneten Streifen, um die Verpackung zu halten, wobei die Streifen, an der Oberfläche, die der Basis der Verpackungshaltevorrichtung zugewandt sind, ausgestattet sind mit wenigstens einem Stift mit einer profilierten Oberfläche, die eine Erhebung oder eine Vielzahl von Erhebungen umfasst, die eine Presspassung erleichtern und Loslösung des Stifts in wenigstens zwei Schritten, wobei die besagte Schicht mit korrespondierender Einklinkvorrichtung für die besagten Stifte ausgestattet ist. 25 30 35 40
12. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem nach Anspruch 1, wobei das System eine Verpackung in der Form eines Blisters (51) umfasst, ausgestattet mit Perforationslinien (52) zwischen den Produkteinschlüssen, wobei der besagte Blister (51) geeignet ist, um sich an die Verpackungshaltevorrichtung (50) anzulagern, die eine Schicht umfasst, die mit einem Verbindungsmittel ausgestattet ist, das auf der besagten Schicht aufgebracht ist, um die Verpackung zu halten oder anzulagern; die besagte Schicht ist geeignet, um einen Druckknopf lösbar aufzunehmen, wobei die besagte Schicht ist operabel verbunden mit der 45 50 55

rahmenähnlichen Struktur (56), die aus ineinander integrierten und entlang der Seite der Verpackung (51) angeordneten Streifen gebildet wird; besagte Struktur ist ausgestattet mit Druckknopf (57); die besagten Streifen der besagten rahmenähnlichen Struktur (56), die mit der Oberfläche besagter Schicht zugewandt sind, sind mit wenigstens einem Stift mit einer profilierten Oberfläche ausgestattet, die eine Erhebung oder eine Vielzahl von Erhebungen umfasst, die Presspassung erleichtern und Loslösung des Stifts in wenigstens zwei Schritten, wobei die besagte Schicht mit korrespondierender Einklinkvorrichtung für die besagten Stifte ausgestattet ist.

13. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem nach Anspruch 1, wobei die besagte Verpackungshaltevorrichtung geeignet ist, um ein Lesemittel einzupassen, um die eindeutige Identifizierungsinformation auf der besagten Verpackung zu identifizieren und zu lesen, wobei das Lesemittel entsprechend geeignet ist, die Identifizierungsinformation bezüglich der Produktverpackung zu bestimmen und übermittelt die Information oder generiert ein Signal als Antwort auf die Information, was mit dem externen Gerät kommunizierbar ist.
14. Ein System für ein kindersicher verpacktes Produkt mit multimodalem Zugangssteuerungssystem, wie in den Ansprüchen 1-13 beansprucht, wobei der Benutzer, um Zugang zu dem Produkt zu erhalten, die zurückschiebbaren Mittel zurückschieben und gleichzeitig das besagte drückbare Bauteil drücken muss, um die Verpackung teilweise von der besagten Verpackungshaltevorrichtung zu lösen, um die vor Kindern sichernde Maßnahme zu vervollständigen, weiterhin muss der Benutzer noch eine weitere Maßnahme durchführen, um die Verpackungsanordnung und Verpackungsfixierungsvorrichtung zu entkoppeln oder zu lösen, die operabel gekoppelt oder eingeklinkt ist durch restriktive Mittel in die besagte Schicht der Verpackungshaltevorrichtung, um auf die Verpackung zuzugreifen.

Revendications

1. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel comprenant :

un emballage (1), un agencement de support d'emballage (2) dans lequel l'emballage (1) est monté avec une charnière,
dans lequel ledit agencement de support d'emballage (2) comprend
une structure semblable à un bac (3), un élé-

- ment déplaçable protubérant (7) par rapport à une base du bac, un élément pouvant être enfoncé (8) de préférence tous deux intégrés dans ladite base du bac (3), un moyen de détection optionnel est prévu pour détecter la présence de l'emballage sur la base dudit bac dans lequel ledit moyen est configuré avec une source d'alimentation et un moyen audio ou visuel ou vibrotactile d'interaction avec un utilisateur, un agencement de fixation d'emballage (10) comprenant une première bande (11) fixant l'emballage (1) et une deuxième bande (13) laquelle deuxième bande (13) est fixée avec possibilité de rotation sur toute la longueur de ladite première bande (11) dans lequel ladite première bande (11) est dotée d'un agencement de montage à charnière (14, 15) sur les bords le long de sa longueur, dans lequel la première bande (11) dudit agencement de fixation d'emballage (10) est connectée avec une charnière à une extrémité distante du bac (3) par rapport audit élément déplaçable protubérant (7), l'emballage (1) est fixé entre lesdites première et deuxième bandes (11, 13) où l'emballage (1) comprend une ouverture (16) destinée à recevoir ledit élément déplaçable protubérant (7), des informations d'identification unique optionnelles (25) dans lequel l'emballage (1) s'ajuste sur ladite première bande (11) dudit agencement de fixation d'emballage (10), ledit agencement de fixation d'emballage (10) est doté d'un moyen restrictif lui permettant de se coupler de manière fonctionnelle avec ledit agencement de support d'emballage (2), dans lequel l'emballage (1) est fixé dans ledit agencement de fixation d'emballage (10) qui peut tourner autour de ladite extrémité du bac (3) de sorte que seul le côté pouvant être ouvert de l'emballage (1) repose sur la base du bac (3) de l'agencement de support d'emballage (2) et ledit moyen restrictif est engagé ou couplé avec ladite base de bac (3) de l'agencement de support d'emballage (2).
2. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon la revendication 1 dans lequel ledit moyen de détection est prévu sur la surface de ladite base sous la forme d'un commutateur pouvant être enfoncé (9) configuré avec une source d'alimentation et un moyen audio ou visuel ou sensitif, lorsque l'emballage (1) est amené à tourner il repose sur la surface de la base (3) et appuie sur ledit commutateur (9) dans lequel lors du retrait de l'emballage (1)
- de ladite position de repos au moment de la consommation du produit dans l'emballage, le commutateur (9) n'est plus enfoncé ce qui a pour résultat de fournir une indication audio ou visuelle à l'utilisateur de manière à lui rappeler de repositionner ledit emballage sur ladite feuille (3) pour lui rendre son état sécurisé pour les enfants.
3. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon les revendications 1, 2 dans lequel ledit moyen restrictif est une cheville (20) avec des protubérances profilées (40) fixées ou intégrées avec ou sur ledit agencement de fixation d'emballage et engagées ou couplées de manière fonctionnelle avec ladite feuille de l'agencement de support d'emballage.
4. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon les revendications 1 à 3 dans lequel ledit emballage (1) comprend des agencements à charnières dans lequel lesdits agencements à charnières sont connectés avec possibilité de rotation audit agencement de support d'emballage.
5. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon les revendications 1 à 4 dans lequel l'emballage (1) comprend des première et deuxième bandes (11, 13) dans lequel l'emballage (1) est fixé entre lesdites bandes pour former un assemblage séparé dans lequel ledit emballage assemblé est couplé avec possibilité de rotation audit agencement de support d'emballage (2).
6. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon les revendications 1 à 5 dans lequel le matériau de fabrication dudit agencement de support d'emballage et dudit agencement de fixation d'emballage est choisi à partir d'un matériau biodégradable tel qu'un matériau à base de carton, de matière plastique, de polymère ou une combinaison de ceux-ci.
7. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon les revendications 1 à 6 dans lequel l'emballage est doté d'une étiquette d'identification destinée à identifier l'emballage en vue d'une authentification dans lequel l'étiquette comprend au moins deux ensembles d'informations d'identification, lesdits au moins deux ensembles d'informations d'identification comprenant un premier ensemble d'informations d'identification et un deuxième ensemble d'informations d'identification disposés chacun sur une surface, un côté ou un plan différent de

l'étiquette d'identification, et des caractéristiques d'identification dudit premier ensemble d'informations d'identification et des caractéristiques d'identification dudit deuxième ensemble d'informations d'identification sont disposées à une position spatiale relative fixe les unes par rapport aux autres, ladite relation spatiale fixe étant utilisée pour identifier le système de produit emballé.

8. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon la revendication 7 dans lequel les éléments d'identification sont présents dans une étiquette sur l'emballage de produit dans lequel un premier élément d'identification comprend une couche lisible de matériau réparti aléatoirement qui est capable de coder des informations d'identification, par exemple un matériau conducteur, un matériau magnétisé ou magnétisable, des particules semiconductrices et des particules actives optiquement, le deuxième élément d'identification comprend de manière appropriée des informations optiques, par exemple un code à barres à une dimension ou à deux dimensions.
9. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon les revendications 1 à 8 dans lequel ledit moyen de détection comprend un agencement de génération de signal, un moyen de traitement de données, un moyen de journalisation et de mémorisation de données configurés avec un moyen de communication, un interrupteur de communication optionnel, une source d'alimentation, un moyen de génération de signal audio optionnel, un oscillateur dans lequel ledit moyen de génération de signal est activé lors du désengagement dudit emballage par rapport à l'agencement de support d'emballage pour détecter le désengagement de l'emballage par rapport audit agencement de support d'emballage pour surveiller ou enregistrer un accès à l'emballage ou au produit à partir du système d'emballage dans lequel l'activation de l'agencement de génération de signal est réalisée par un moyen de type électronique, mécanique, optique, visuel.
10. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon les revendications 1 à 9 dans lequel lors du désengagement de l'emballage par rapport audit agencement de support, un signal provenant dudit agencement de génération de signal est envoyé audit moyen de traitement de données dans lequel l'heure et la date du produit distribué sont enregistrées dans un journal dans l'agencement de journalisation de données dudit moyen de traitement de données

dans lequel lesdites données enregistrées dans un journal dans ledit moyen de traitement de données sont transférées ou transmises par le biais d'un moyen de communication vers un ou des dispositifs externes à l'aide de procédés à hautes fréquences, de liaison à infrarouges, câblées ou à contact direct tels que I2C (inter-circuits intégrés), SPI (interface périphérique série), ou une communication série ou parallèle.

11. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon la revendication 1 dans lequel ledit agencement de support d'emballage est connecté de manière fonctionnelle à un agencement de fixation d'emballage qui se présente sous la forme d'une structure semblable à un cadre destinée à recevoir l'emballage dans celle-ci dans lequel la structure semblable à un cadre comprend des bandes intégrées les unes avec les autres et disposées autour des bords de l'emballage de manière à maintenir l'emballage dans lequel les bandes sur la surface tournée vers la base de l'agencement de support d'emballage sont dotées d'au moins une cheville avec une surface profilée comprenant une ou une pluralité de protubérances qui facilitent le montage à ajustement serré et le désengagement de la cheville en au moins deux étapes dans lequel ladite feuille est dotée d'un agencement d'engagement correspondant pour lesdites chevilles.
12. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon la revendication 1 dans lequel le système comprend un emballage sous la forme d'une boursouffure (51) dotée de lignes de perforations (52) entre les contenants de produit, ladite boursouffure (51) est destinée à attacher l'agencement de support d'emballage (50) comprenant une feuille dotée d'un moyen de liaison disposé sur ladite feuille de manière à maintenir ou attacher l'emballage, ladite feuille est destinée à recevoir de façon amovible un fermoir dans lequel ladite feuille est connectée de manière fonctionnelle à la structure semblable à un cadre (56) comprenant des bandes intégrées les unes aux autres et disposées le long du côté de l'emballage (51), ladite structure est dotée d'un fermoir (57), lesdites bandes de ladite structure semblable à un cadre (56) sur la surface tournée vers ladite feuille sont dotées d'au moins une cheville avec une surface profilée comprenant une ou une pluralité de protubérances qui facilitent un montage à ajustement serré et un désengagement de la cheville en au moins deux étapes dans lequel ladite feuille est dotée d'un agencement d'engagement correspondant pour lesdites chevilles.

13. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon la revendication 1 dans lequel ledit agencement de support emballage est destiné à recevoir un moyen de lecteur destiné à identifier et à lire les informations d'identification unique sur ledit emballage dans lequel le moyen de lecteur est capable de manière appropriée de détecter les informations d'identification se rapportant à l'emballage de produit et transporte les informations ou génère un signal en réponse aux informations qui peuvent être communiquées vers le dispositif externe. 5 10
14. Système de produit emballé de sécurité pour enfants avec un système de contrôle d'accès multi-opérationnel selon les revendications 1 à 13 dans lequel pour accéder au produit, l'utilisateur doit déplacer ledit moyen déplaçable et appuyer simultanément sur ledit élément pouvant être enfoncé pour désengager partiellement ledit emballage dudit agencement de support d'emballage pour réaliser une activité de sécurité pour les enfants, en outre l'utilisateur doit réaliser encore une autre activité pour découpler ou désengager l'assemblage de l'emballage et de l'agencement de fixation d'emballage qui est couplé ou engagé de manière fonctionnelle par le moyen restrictif avec ladite feuille de l'agencement de support d'emballage pour accéder à l'emballage. 15 20 25 30 35 40 45 50 55

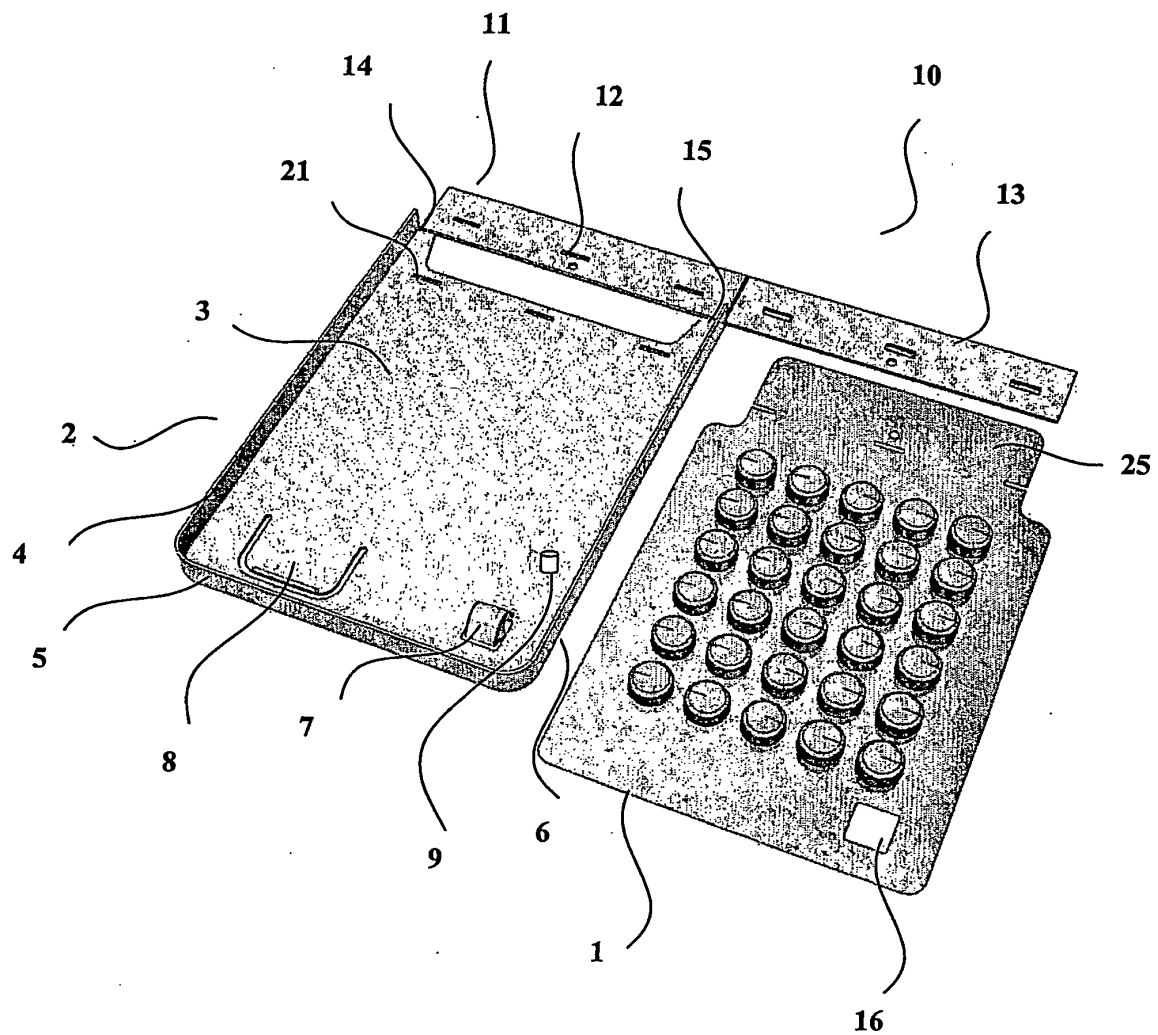


Figure 1

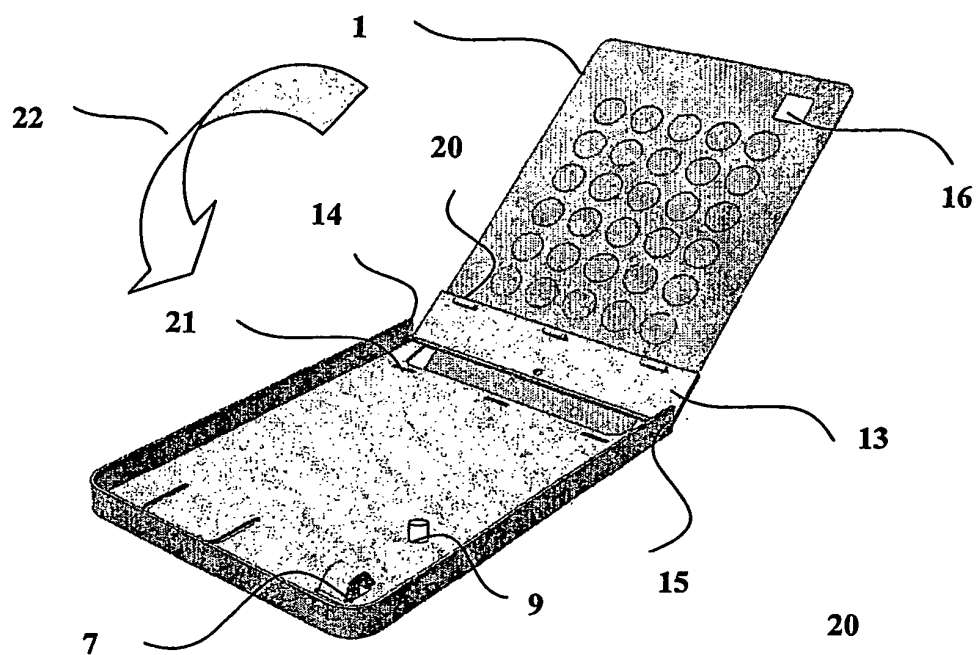


Figure 2 (a)

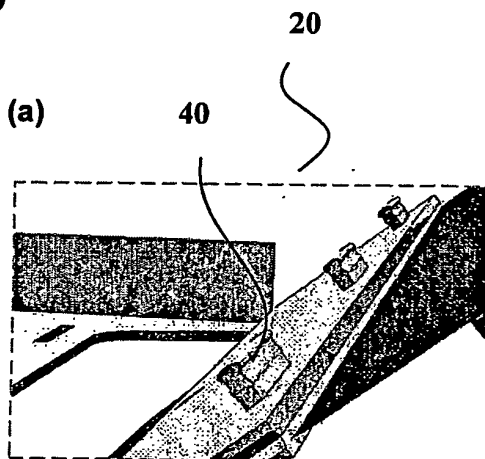


Figure 2 (b)

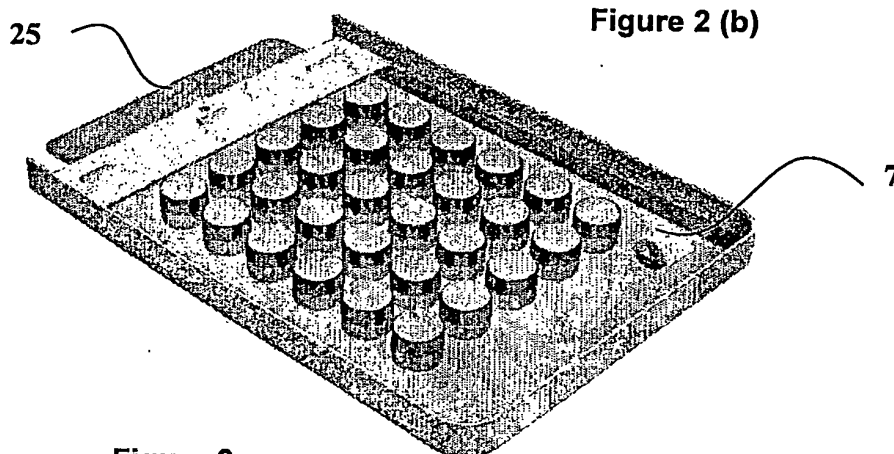


Figure 3

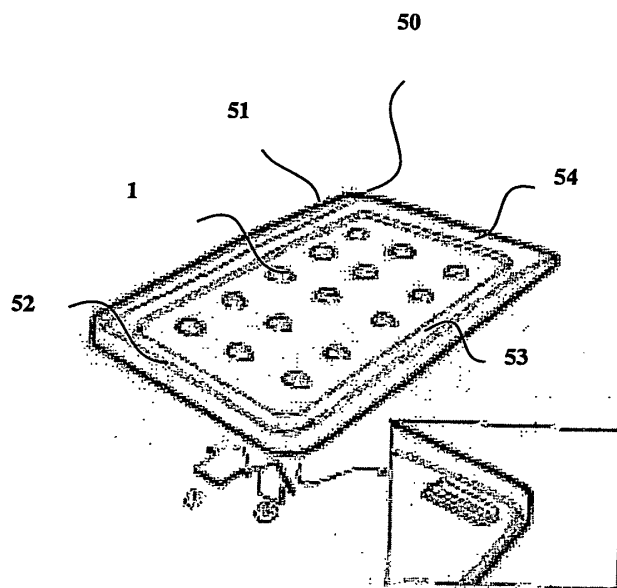


Figure 4 (a)

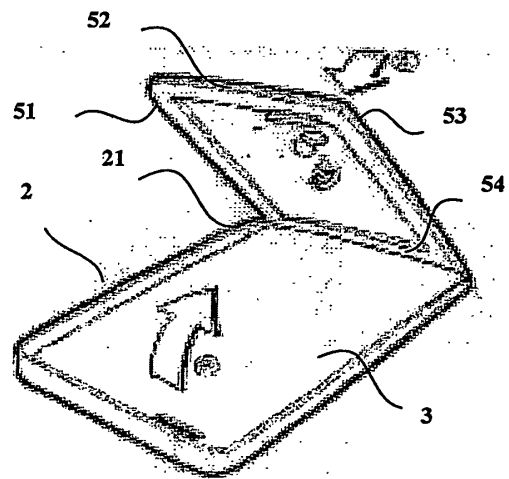


Figure 4 (b)

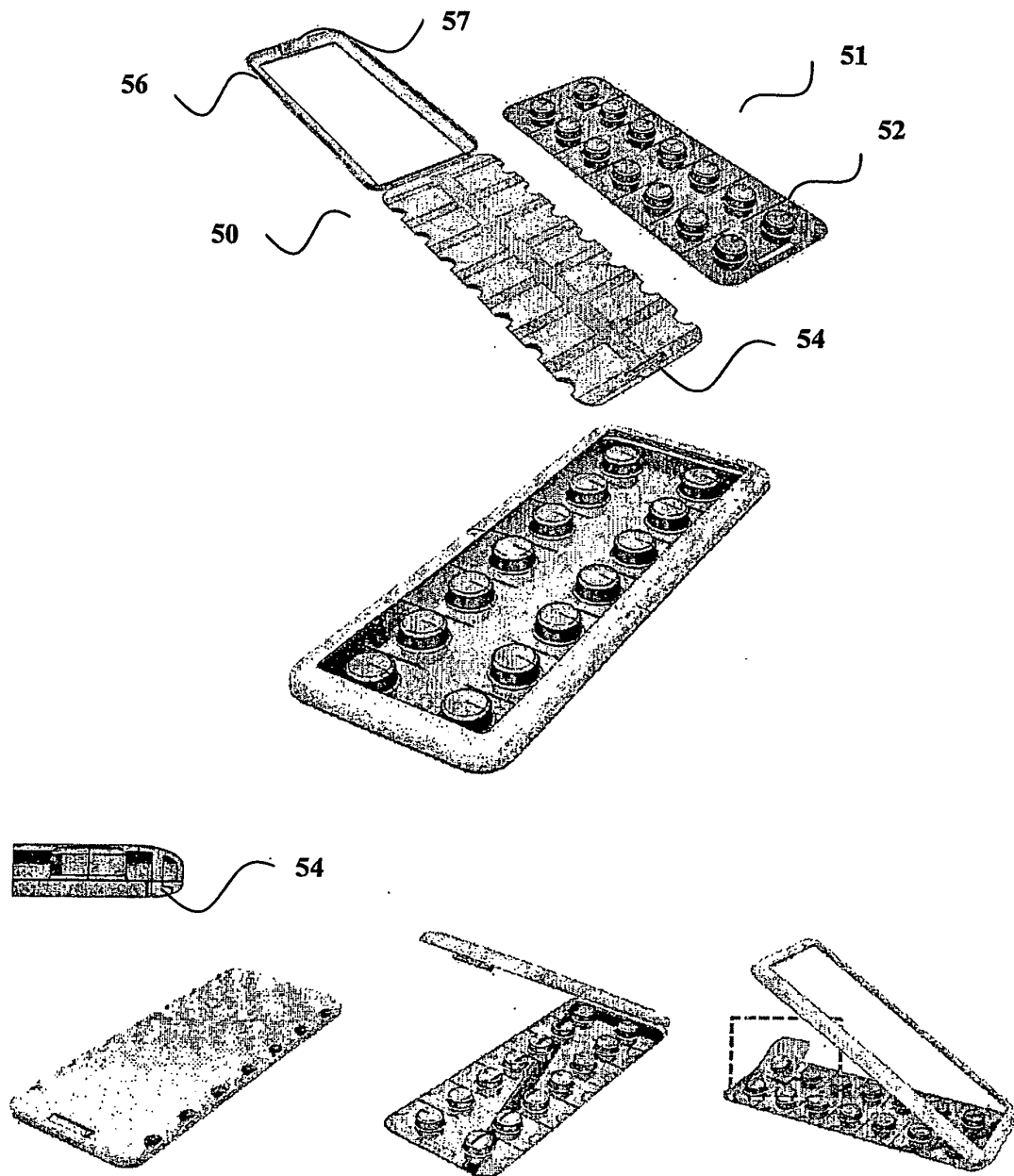


Figure 5

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 7201274 B [0006]
- US 7325689 B [0007]
- US 7188728 B [0008]
- EP 1685034 A [0009]
- US 6679381 B [0010]
- US 20070023317 A [0013]